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*The Megalops stage of Ocypoda*; by S. I. SMITH. — The *Monolepis inermis*, long ago described by Say,\* and partially figured by Dana,† is undoubtedly a stage in the development of *Ocypoda arenaria*. The large size and peculiar structure of this megalops render it one of the most interesting forms of the group of larvæ to which it belongs. It is closely allied to the *Monolepis orientalis* Dana, from the Sooloo Sea, figured in detail on plate 31 of the Crustacea of the Wilkes' Exploring Expedition. The carapax is very convex above and narrowed toward the front. The front is deflexed and the extremity tricuspidate, the median tooth being long and narrowly triangular, while the lateral teeth are small and obtuse. The sides are high and impressed so as to receive the three anterior pairs of ambulatory legs. The third pair of ambulatory legs are closely appressed along the upper edge of the carapax, and extend forward over the eyes, the dactyli being curved down over the eyes and along each side of the front. The posterior legs are small and weak, and each is folded up and lies in a groove on the latero-posterior surface of the carapax. The external maxillipeds have almost exactly the same structure as in the adult *Ocypoda*, and, as in the adult *Ocypoda*, there is a tuft of peculiar hairs between the bases of the second and third ambulatory legs. This megalops is common upon the coast of the Southern States, it has been found at Block Island, and I have myself collected it, late in August, at Fire Island Beach, Long Island. In the largest specimen from the last locality the carapax is 9.4<sup>mm</sup> long and 5.6 broad.

A large number of young specimens of the *Ocypoda*, collected at Fire Island Beach, indicate plainly that they had only recently changed from this megalops. Some of the smallest of these specimens, in which the carapax is 5.6 to 6.0<sup>mm</sup> long and 6.1 to 6.5 broad, differ from the adult so much that they might very easily be mistaken for a different species. The carapax is very slightly broader than long and very convex above. The front is broad, not narrowed between the bases of the ocular peduncles, and triangular at the extremity. The margin of the orbit is not transverse but inclines obliquely backward. The ambulatory legs are nearly naked, and those of the posterior pair are proportionally much smaller than in the adult.

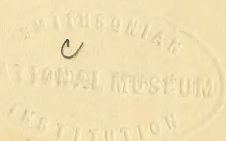
The adult *Ocypoda* is terrestrial in its habits, living in deep holes above high water mark on sandy beaches; but the young in the zoëa state are undoubtedly deposited in the water, where they lead a free-swimming existence like true pelagic animals,

\* Journal Acad. Nat. Sci. Philadelphia, vol. i, p. 157, 1817.

† Crustacea Wilkes' Expl. Exped., plate 31, fig. 6.

until they become full grown in the megalops state. Say mentions that his specimens were found cast upon the beach by the reflux tide and "appeared desirous to protect themselves, by burrowing in the sand, in order to wait the return of the tide," but they were more likely awaiting the final change to the terrestrial state. The tufts of peculiar hairs between the bases of the second and third ambulatory legs, and in the adult connected with the respiration, are present in the full grown megalops, and are undoubtedly provided to fit the animal for its terrestrial existence as soon as it is thrown upon the shore. The young in the megalops stage occur on the shore of Long Island, in August, and perhaps earlier. At Fire Island Beach, in 1870, no specimens of *Ocypoda* were discovered till the last of August, and those first found were the smallest ones obtained; by the middle of September, however, they were common on the outer beach, and many of them were twice as large as those first obtained. Although careful search was made along the beach for several miles, not a specimen of the adult or half-grown crab could be found. Every individual there had evidently landed and developed during the season. Probably all those living the year before had perished during the winter, and it is possible that this species never survives long enough to attain its full growth so far north.

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